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(54) Title: POROUS MOLECULARLY IMPRINTED POLYMER MEMBRANES

(57) Abstract: Highly porous substance-selective polymeric membranes are produced by co-polymerisation of functional monomers and cross-linker in the presence of template, plasticiser (non-extractable component), and pore-forming component (extractable component). Extraction of the template and porogen molecules leads to the formation of small (< 100 nm) and large (> 500 nm) pores, including small pores having a shape and arrangement of functional groups complementary to the template molecule. The membranes possess enhanced affinity towards the template and its analogues and also have high flexibility and porosity. Such membranes can be used in analytical chemistry (as sensor elements and for solid-phase extraction materials) for applications in pharmacology, medicine, the food industry, water purification and environmental clean up.

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A. CLASSIFICATION OF SUBJECT MATTER

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B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 00 32648 A (GOTTSCHALL INSTRUCTION DR ;GOTTSCHALL KLAUS (DE)) 8 June 2000 (2000-06-08) claims 1-10	1-16
Y	WO 01 49240 A (NOVARTIS ERFIND VERWALT GMBH ;NOVARTIS AG (CH); DOMSCHKE ANGELIKA) 12 July 2001 (2001-07-12) claims 1-10	1-16
P,X	WO 03 033575 A (MURRAY GEORGE M ;UNIV JOHNS HOPKINS (US)) 24 April 2003 (2003-04-24) claim 1	1-16
P,X	US 2003/113234 A1 (MURRAY GEORGE M) 19 June 2003 (2003-06-19) claim 1	1-16

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☒ Patent family members are listed in annex.

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P, X	US 2003/059346 A1 (MURRAY GEORGE M) 27 March 2003 (2003-03-27) claim 1 -----	1-16.

INTERNATIONAL SEARCH REPORT

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0032648	A	08-06-2000	DE 19855173 A1	31-05-2000
			DE 19928236 A1	28-12-2000
			AU 1655900 A	19-06-2000
			AU 757078 B2	30-01-2003
			AU 1777700 A	19-06-2000
			BR 9915787 A	21-08-2001
			CA 2352066 A1	08-06-2000
			CA 2352068 A1	08-06-2000
			CN 1332752 T	23-01-2002
			CZ 20011885 A3	17-10-2001
			DE 19860972 A1	26-04-2001
			WO 0032648 A1	08-06-2000
			WO 0032649 A1	08-06-2000
			EP 1149118 A1	31-10-2001
			EP 1141038 A1	10-10-2001
			HU 0200085 A2	29-05-2002
			JP 2003510376 T	18-03-2003
			JP 2002531599 T	24-09-2002
			SI 20641 A	28-02-2002
			ZA 200104298 A	23-05-2002
			AT 232884 T	15-03-2003
			AU 6151100 A	09-01-2001
			BR 0011798 A	26-03-2002
			CA 2375254 A1	28-12-2000
			CN 1355816 T	26-06-2002
			CZ 20014460 A3	12-06-2002
			DE 50001288 D1	27-03-2003
			DK 1192191 T3	07-07-2003
			WO 0078825 A1	28-12-2000
			EP 1192191 A1	03-04-2002
			HU 0201808 A2	28-09-2002
			JP 2003502491 T	21-01-2003
			SI 1192191 T1	31-08-2003
			US 6576767 B1	10-06-2003
			ZA 200110167 A	02-10-2002
WO 0149240	A	12-07-2001	AU 4232701 A	16-07-2001
			CA 2394653 A1	12-07-2001
			WO 0149240 A2	12-07-2001
			EP 1252196 A2	30-10-2002
			JP 2003519250 T	17-06-2003
			NO 20023230 A	03-07-2002
			US 2002004573 A1	10-01-2002
WO 03033575	A	24-04-2003	WO 03033575 A1	24-04-2003
			US 2003113234 A1	19-06-2003
US 2003113234	A1	19-06-2003	WO 03033575 A1	24-04-2003
US 2003059346	A1	27-03-2003	NONE	